DOCUMENT RESUME

ED 252 655 CE 040 018

AUTHOR	Hassanein, Ruth S.; And Others
TITLE	Creating the Requisite Data Base: A New Definition of Need.
PUB DATE	10 Nov 84
NOTE	18p.; Paper presented at the National Adult Education Conference (Louisville, KY, November 10, 1984).
PUB TYPE	Viewpoints (120) -- Speeches/Conference Papers (150)
EDRS PRICE	MF01/PC01 Plus Postage.
DESCRIPTORS	Adult Education; *College Faculty; Curriculum Development; Delphi Technique; *Faculty Development; Higher Education; *Material Development; National Surveys; *Needs Assessment; Program Development; *Questionnaires; *Research Needs
IDENTIFIERS	Satisfaction

ABSTRACT

A study that used a non-prescriptive, two-round national random sample survey of allied health faculties resulted in an instrument to be used to measure faculty research needs. The Delphi technique, as used, included two rounds; Round 3 was deleted to insure complete anonymity and to avoid opinion molding. Round 1 of the Research Needs Assessment, the open-ended round of the survey, was conducted in one school of allied health. Two questions were asked in Round 2: How important is this need to you personally in your research? and To what extent is this need satisfied for you in your institution? Questionnaires were completed by faculty members of 16 randomly selected schools of allied health. A formula was developed for a Perceived Personal Need score, which takes into account the respondent's perception of both the importance of the item and and dissatisfaction with respect to the item. The instrument developed offered a basic framework for collecting data about any need item on the two levels of the concept of need: importance and dissatisfaction. (Five tables are attached.) (YLB)

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Creating the Requisite Data Base: A New Definition of Need

by

Ruth S. Hassanein, Ph.D.
William C. Smith, Ph.D.

&

George E. Spear, Ph.D.

presented at the
1984 AAACE National Adult Education Conference
Louisville, Kentucky
November 10, 1984

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Late in 1982, in anticipation of building a curriculum for a faculty research development program, we set out to do a needs assessment. We were aware of the importance of conducting the assessment descriptively and therefore our methodology was assiduously non-prescriptive. We expected some surprising need items; what we did not expect -- but what we got -- was a new definition of need.

The meaning of "need" has been the center of an intellectual controversy in the literature for over twenty years. Before we consider the arguments which have been put forth, let us partake of a personal needs assessment on ourselves. The first table shows the simple form which is now being distributed for you to fill out. Please fill out the form as it applies to yourself and hold on to it.

After each participant has filled out this simple needs assessment, let us discuss the problem from the theoretical point of view:

The principles of designing curricula based on learner's needs has become a tenet in the field of adult education. The Andragogical Model designed by Knowles (1970) includes the process of needs assessment as a necessary prerequisite for the setting of objectives in adult education programs.

If one accepts the importance of designing a curriculum based on learners' needs, how do we determine what those needs are? In 1957, a seminal article by Archambault initiated a discussion in the literature which has lasted for more than 20 years. In this work, Archambault complained that current meanings of the work "need" were vague. He proposed the use of the term "genuine need," which would refer to a specific deficiency in the learner's environment.

This was but the first of many articles by scholars in the field concerning attempts at definitions, or at least clarifications, of the various types of human needs, how they can be identified, and by whom. Such terms as prescriptive, prescribed, or ascribed need (Beatty, 1976; Houle, 1972; Komisar, 1968), motivational need (Komisar, 1968), real need (Atwood & Ellis, 1977), and felt need (Beatty, 1976) are found in the literature. Two authors (Bradshaw, 1974, Monette, 1977) believed that four categories of need were necessary for complete classification: felt, expressed, normative, and comparative need.

One dichotomy of needs emerged as especially important to adult educators: that of prescriptive needs (other-determined) versus descriptive needs (learner-determined). Given that successful adult education involves participatory learning, it seems intuitive that descriptive needs, also known as felt, expressed, or motivational needs, should receive the highest consideration. McMahon (1970) insisted that the learner always has the last word in making the judgment about his own need and what it would take to satisfy that need.

Because the present study concerned a faculty development program, a descriptive needs assessment was carried out. Most authorities in faculty development agree that, to ensure successful programs, the program planners must stay in close touch with the proposed participants. Especially with respect to needs assessment, Stake (1973) urged that planners find out from the faculty members involved what their needs are, rather than prescribing what they should be. A study by Reardon and colleagues in 1977 found that the prospective learners themselves were able to identify many more learning needs than the program planning agents. Finally, Rasp (1974) reported that descriptive needs assessment can help predict whether program policies later developed are likely to be resisted and how great a task it would be to overcome any resistance which might occur.

In the search for a good non-prescriptive needs assessment tool we decided to concentrate on the Delphi technique. The Delphi is a multiphase survey in which the first round questionnaire is open-ended and its results are collated and structured for use in subsequent rounds. It was developed at the Rand Corporation during the 1950's for the purpose of reaching consensus among group members without letting personal interaction carry the inordinate amount of weight it sometimes does when ordinary group dynamics come into play. The major use of the Delphi method has been to reach a consensus while allowing individual opinion the greatest possible latitude.

As traditionally implemented for consensus purposes, the Delphi has at least three rounds and makes use of the personal feedback of each participant. The purpose of the third round is to reveal to each participant the modal or mean Round 2 response of the total group plus a reminder of his own response, with an invitation to revise the latter if he so desires. We used a survey modeled after the Delphi without this last round. Several considerations went into this decision. The first, and most important, consideration was that of respondent anonymity. While the traditional use of the Delphi technique maintains anonymity of respondents from each other, their identity must be known to the person who administers the survey, in order for the feedback mechanism to take place. Often, however, complete anonymity is essential if responses are to be open, honest and complete. This was our major reason for deleting the third round.

The feedback mechanism of Round 3 has also been called into question by two other groups of researchers. Weaver (1971) recognized that "the influence of a group norm, even though it may be anonymous, may influence the judgements of certain people". Evidence to support this theory was furnished by Cyphert and Gant in 1971 when they reported the results of an actual Delphi survey. In their study they included a "bogus" item, in that it had originally been rated

far below average, but it was presented in the feedback round as being very highly rated on the average. The authors found that the study participants raised their own rating considerably upwards. They therefore concluded that the traditional Delphi, including feedback rounds, can be used to mold opinion, as well as to measure it.

It was not the purpose of the present study to mold opinion; rather to accept and attempt to explain participant differences which did occur. In discussing needs assessment during curriculum evaluation, Stake (1970) emphasized the importance of such differences when he said "To describe need is not only to describe the something but to describe the persons asked. People see need differently. The evaluator has no obligation to find consensus. In fact he is acting improperly if he does not report the diversity of viewpoints of need".

The subjects for this study were faculty members from schools of allied health. Faculties from allied health were considered especially appropriate for this study for two reasons: first, these faculties have been organized relatively recently and thus are especially aware of issues in faculty development; second, such faculties are usually heterogeneous in many respects and might therefore have a broad spectrum of need items.

Round 1 of the Research Needs Assessment, the open-ended round of the survey, was conducted in one school of allied health. This school, with 62 faculty members, was a part of a large medical center complex. Its faculty members came from various health science backgrounds and were additionally heterogeneous with respect to educational preparation, i.e., formal degrees possessed by the faculty members. This school has been in existence as a entity for less than 10 years. When surveyed it was composed of 10 departments or programs, with great variation as to faculty responsibilities. Many of its members had no experience with research, while others engaged in such activity

virtually 100% of their time. All of its members, however, were expected to engage in the three major faculty pursuits of teaching, service, and research.

The data from Round 1 were collected by the investigator at regular or specially-scheduled meetings of the departments or programs of the local School of Allied Health. These took place in the usual meeting places of these groups.

After the data were collected from this open-ended round, the members of the Research Committee of the school categorized and organized the responses, using techniques of content analysis. Duplicates were removed, and responses were made generic, that is, not specific to any one discipline. Because it was a serious research project, categories and need statements were then validated for literal content by a panel of college teachers of English and Reading.

The resulting structured list of need items was used for the Round 2 survey. In Round 2, (see Table 2) subjects were to be asked the following question concerning each listed research need item:

"How important is this need to you personally?"

The instrument for Round 2 was typed and the investigator requested that the Research Committee members administer the questionnaire to themselves as an intermediate, pilot-style, test. At this point, discussion between committee members and the investigator revealed that the term "need" required more specific definition in order for them to answer the questions as the needs applied to them personally. The committee members stated that they felt they could personally answer the questions concerning the need items only if they could face the issue of importance of the item separately from the issue of whether or not the need was satisfied for them in their institution. As one committee member asked, "If I have finally managed to install an important computer in my laboratory, does that mean I no longer need it?" These discussions led us to the realization that both pieces of information were valuable for future planning: the importance of the need item to the individual

researcher, and his satisfaction concerning the availability of that item in his environment.

The investigator therefore amended the questions for Round 2 to read as follows for each listed need item:

How important is this need to you personally in your research?

To what extent is this need satisfied for you in your institution?

(Table 3)

Answers to each of these two questions were to be indicated by marking two scales, each of which had eight notches with seven spaces in between the notches.

For Round 2 of the survey, questionnaires were sent in April 1983 to the Deans of 16 randomly selected Schools of Allied Health, reported to have a total of 807 faculty members. Assuming the Deans sent the questionnaires to all 807 faculty members, the 346 responses which were received by us before the end of July 1983 represented a response rate of 43 percent. In the analyses concerning the types of faculty development research needs, the statistical procedures selected were mostly descriptive in nature, and will be reported elsewhere.

We can score each scale by assigning a numerical value from 1 to 7 to each space on the scale, as degree of importance or satisfaction increases. With these two ordinal scales, we can carry out data base construction and perform data analysis. Analysis here showed that the two questions about each need item were not just the two sides of the same coin; that is, the need did not become important simply because of lack of satisfaction of the respondent This was shown by the fact that the correlation coefficients formed by matching the importance scores with the satisfaction scores for each item were, for the most part, close to zero. These correlations are shown in Table 4. The lack of correlation between the two scores for most items indicates the general <u>independence</u> of the two levels of the concept, and therefore the logic of asking

both questions. It also underscores the fact that the respondents recognized the difference between the two levels of the concept and answered each independently.

For the sake of prioritizing in program planning, however, we recognized the importance of ending up with a single score for each need item, which takes into account the respondent's perception of both the importance of the item and his dissatisfaction with respect to the item. This could be accomplished by "weighting" each discrepancy or dissatisfaction score according to the perceived importance of the item to the respondent. This would lead to the following formula for calculation:

$$PPN = I\,(8-S),$$

where

PPN = Perceived Personal Need Score,

I = Importance Score,

and

S = Satisfaction Score.

The advantage of this method of calculating the needs score is that it minimizes the resulting Perceived Personal Need score if either the importance or dissatisfaction is low. On the other hand if both of the two levels of the concept are high, the size of the perceived personal needs score is inflated by this weighting process and thus emphasized. This emphasis is important because it is the combination of the two levels which is actually crucial to both the subject and to program planners.

The Perceived Personal Need, therefore, can be defined as a condition which is important to the subject, and about which he is not satisfied in his present environment. We can now answer the questions on the first needs assessment again in a less ambiguous way, considering both aspects of each need. (Table 5)

The old definition of need as simply a gap or deficiency in a person's environment has been shown by this study to be inadequate, unless the importance of the deficiency is taken into consideration. The Perceived Personal Needs Score takes into consideration the fact that both levels of the concept can and should be measured on a continuum, and that a deficiency in the learner's environment is only as important as he perceives it to be.

To reiterate, previous discussions in the adult education literature have centered on an adequate definition of the word need. As late as 1978 Griffith complained that there was still no adequate definition of the term. He further stated that the actual carrying-out of a needs assessment process prior to program planning was a very rare event. The present study indicates that this latter observation may be one reason for the confusion still existing concerning the term. However well theory itself serves us, there may be a time when empirical or data-based information becomes essential in clarifying the concepts we seek to define. Such appears to be the case in the present study. Not until the actual situation occurred, in which faculty members were required to answer questions about need items as they concerned their own situations, did the realization take place that the word was ambiguous. The serendipitous finding that the concept contained two levels was no doubt also enhanced by the nature of the subjects. As faculty members in higher education they probably tend to enjoy intellectual problem-solving as much as any group in our society.

The finding also points out once again the incalculable value of two principles of adult education which seem to be all too easily ignored:
1) descriptive is more appropriate than prescriptive needs assessment, and
2) we need the participation of the potential learners in the process itself.
As long as the faculty members in the present study were "prescribing"; that is, helping to analyze content and to design need items for someone else, the confusion about the meaning of the word need did not concern them. It was only

when they put themselves into the roles of potential learners and had to answer the questions as they applied to themselves that they discovered it could not be done with the single, vague, ambiguous, level of the concept.

In summary, the present study, using a non-prescriptive, two-round national random sample survey of allied health faculties, has resulted in an instrument to be used to measure faculty research needs. The use of this instrument has now been demonstrated successfully in these health science faculty members nationwide and more recently in nursing and medical school faculty members also. It should be of great value to groups attempting to assign priorities in program planning for faculty research development. It has been designed to assess both learning and non-learning needs, in order that all major barriers to faculty research might be identified.

However, perhaps the greatest value of the instrument as it stands is that it offers a basic framework for collecting data about any need item on the two levels of the concept of need: importance and dissatisfaction. It allows each of these to be estimated independently on a separate scale, a process which was found by faculty members to greatly increase their ability to evaluate a need as it applied to themselves personally. Furthermore the present study offers a method of calculation to recombine these two aspects of need in such a way as to improve ease of interpretation for those who would set priorities in program planning. This aspect of the instrument should make it a model for those planning a needs assessment of any kind.

Finally, it is the opinion of the authors that the practice of assessing needs among those who <u>have</u> the needs should be increased. The result of this work offers a way by which it can be done.

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TABLE 1

Need Item	How Important is this Need to you Personally? Not Important ... Very Important
1. Personal Computer	|_____|
2. Research Assistant	|_____|
3. Transportation	|_____|
4. Food	|_____|
5. Water	|_____|
6. Air	|_____|

Table 2

Original Proposed Question Form

	Need Item	How Important is this Need to you Personally? Not Important — Very Important
1.	x x x x x x x x x x x	| | | | | | | | |
2.	x x x x x x x x x x x	| | | | | | | | |

Table 3

	Need Item	How Important is this Need to you Personally? Not Important	Very Important	To What Extent is this Need Satisfied for you in your Environment? Not Satisfied	Very Satisfied
1.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	
2.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	
3.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	
4.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	
5.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	
6.	xxxxxxxxxxxxxx	| | | | | | | |		| | | | | | | |	

Table 4

Correlation Between Importance Scores And Satisfaction Scores For Each Need Item

NEED ITEM NUMBER	CORRELATION COEFFICIENT	NEED ITEM NUMBER	CORRELATION COEFFICIENT
01	0.056	31	-0.060
02	0.130	32	-0.095
03	0.007	33	0.043
04	-0.235	34	-0.026
05	-0.264	35	0.023
06	-0.057	36	0.020
07	0.120	37	-0.084
08	-0.002	38	0.001
09	-0.195	39	0.004
10	-0.108	40	0.043
11	-0.109	41	0.008
12	-0.086	42	-0.055
13	-0.144	43	-0.055
14	-0.163	44	0.056
15	-0.030	45	-0.349
16	-0.104	46	-0.013
17	0.021	47	-0.123
18	-0.181	48	-0.119
19	-0.186	49	-0.097
20	-0.220	50	-0.153
21	-0.195	51	-0.162
22	-0.136	52	-0.176
23	-0.077	53	0.042
24	-0.162	54	-0.344
25	-0.117	55	-0.308
26	-0.143	56	-0.161
27	-0.022	57	-0.176
28	-0.117	58	-0.170
29	0.016	59	-0.138
30	-0.071	60	-0.116
		61	-0.093

Table 5

	Need Item	How Important is this Need to you Personally? Not Important	Very Important	To What Extent is this Need Satisfied for you in your Environment? Not Satisfied	Very Satisfied
1.	Personal Computer	| | | | | | | |		| | | | | | | |	
2.	Research Assistant	| | | | | | | |		| | | | | | | |	
3.	Transportation	| | | | | | | |		| | | | | | | |	
4.	Food	| | | | | | | |		| | | | | | | |	
5.	Water	| | | | | | | |		| | | | | | | |	
6.	Air	| | | | | | | |		| | | | | | | |	